

## **I. GILA RIVER INDIAN COMMUNITY**

The Gila River Indian Reservation (GRIC) is located on 372,000 acres in south-central Arizona to the south of Phoenix and on both sides of the Gila River from the Salt River confluence upstream for more than 55 miles. Figure L-IND-2 shows the location of the GRIC.

The GRIC is steadily increasing industrial, retail and recreational development activities. Agriculture also continues to play a dominant role, and the GRIC also owns and operates related agricultural businesses such as chemical fertilizer, cotton gin and grain storage facilities. The Gila River casinos are also owned and managed by the GRIC. All profits from gaming are utilized by the GRIC to expand the Tribe's economic development, to provide additional social services to community members, and for Tribal operations.

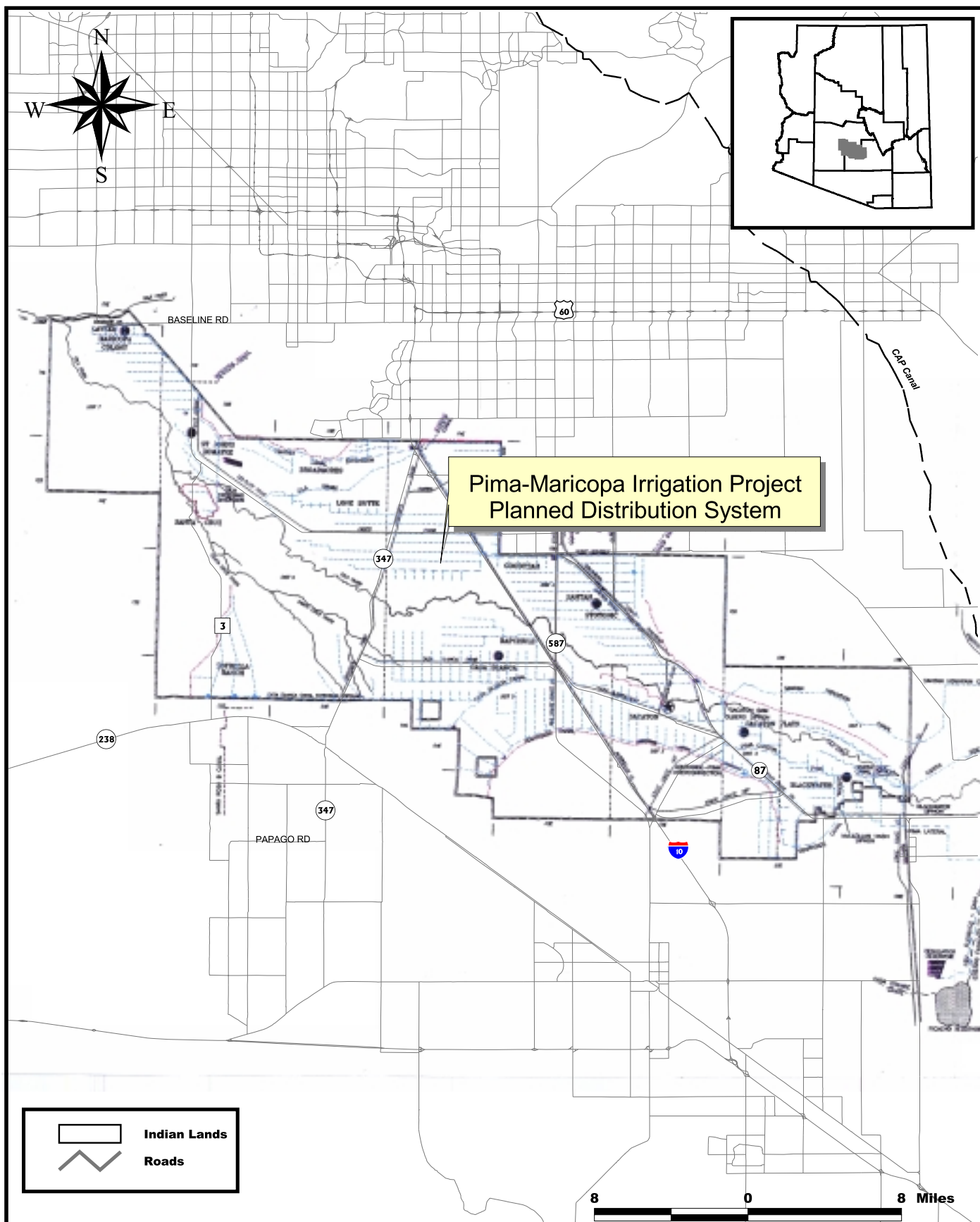
The Pima Indians have farmed this valley since before the arrival of European settlers. Maricopa Indians have been located in the area since the 1700s. At the time of the Treaty of Guadalupe Hidalgo (1848) and the Gadsden Purchase (1853), the Tribe had an economy of abundance due to its farming system out of the Gila River. Upstream development by non-Indian farmers in the mid to late 1800s severely limited the amount of water reaching these lands, thereby causing abandonment of much of the irrigated land. To date, various efforts to restore a water supply to the lands have been only partially successful. Reservation agriculture is dependent upon irrigation water from the Gila River through the San Carlos Indian Irrigation Project (SCIIP), pumped groundwater, the GRIC's existing CAP water allocation, and a small amount of drainage water.

In 1998, GRIC applied a total of 202,453 af of water to 22,211 acres of on-Reservation agricultural lands. Of that total, 174,498 af, or 86 percent, were from Gila River water and 27,955 af, or 14 percent, were from groundwater.

### **I.A. Proposed Allocations**

The GRIC received an original CAP allocation of 173,100 afa. GRIC plans to utilize this CAP water along with other existing and future water supplies to rehabilitate existing agricultural lands and develop new lands for agriculture up to a maximum of 146,330 acres. The lands to be rehabilitated/developed, and associated facilities to be constructed and/or rehabilitated, are identified in the *Final Programmatic Environmental Impact Statement for the Pima-Maricopa Irrigation Project* (U.S. Department of the Interior, 1997) PMIP PEIS. This agricultural development, called the PMIP, represents a component of GRIC's Master Plan for Land and Water Use (Franzoy Corey, 1985). The Master Plan identifies GRIC's major goals and preferences for improving and developing Reservation land and water resources.

Under the proposed alternatives, GRIC would receive additional CAP allocations ranging from 0 afa (under the No Action Alternative) to 170,200 afa (under Non-Settlement Alternative 3). Under the non settlement alternatives, an additional 17,800 af of CAP water would be designated for use in a GRIC water settlement, consistent with requirements of the FMIC Water Rights Settlement Act, which requires that the water be used in the settlement of Indian water rights claims to the Salt and Verde River watershed. Table L-Indian-2 summarizes the



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**CAP Allocation Draft EIS  
General Location Map  
Gila River Indian Community**

**Figure #L-IND-2**

proposed allocations by alternative. Table L-Indian-3 provides detail of the allocations' priorities under each alternative.

<b>Table L-Indian-2</b> <b>CAP Allocation Draft EIS</b> <b>GRIC</b> <b>Total CAP Allocations</b> <b>(in afa)</b>					
	<b>Alternative</b>				
CAP Allocation	No Action	Settlement	Non Settlement 1	Non Settlement 2	Non Settlement 3
Existing	173,100	173,100	173,100	173,100	173,100
Proposed-allocated	0	155,400 <sup>(a,b)</sup>	35,600 <sup>(b)</sup>	75,099 <sup>(b)</sup>	170,200 <sup>(a,b)</sup>
Proposed-designated	0	0	17,800 <sup>(a)</sup>	17,800 <sup>(a)</sup>	17,800 <sup>(a)</sup>
Total	173,100	328,500 <sup>(a,b)</sup>	226,500 <sup>(a,b)</sup>	265,999 <sup>(a,b)</sup>	361,100 <sup>(a,b)</sup>
<b>Notes:</b> (a) Consistent with FMIC Water Rights Settlement Act provisions, 17,800 afa of HVID water would be converted to Indian priority and allocated under Settlement Alternative; under non settlement alternatives, the water is only designated but cannot be allocated without an Indian water rights settlement. (b) Includes 18,600 afa relinquished by RWCD, NIA priority and 17,000 afa relinquished by ASARCO, M&I priority.					

<b>Table L-Indian-3</b> <b>CAP Allocation Draft EIS</b> <b>GRIC</b> <b>Priority of CAP Allocations</b> <b>(in afa)</b>					
	<b>Alternative</b>				
CAP Allocation Priority	No Action	Settlement	Non Settlement 1	Non Settlement 2	Non Settlement 3
Indian	173,100	190,900	190,900 <sup>(a)</sup>	190,900 <sup>(a)</sup>	190,900 <sup>(a)</sup>
M&I	0	17,000	17,000	37,000	37,000
Non-Indian Ag	0	120,600	18,600	38,099	133,200
Total	173,100	328,500	226,500	265,999	361,100
<b>Notes:</b> (a) Includes 17,800 afa designated but not allocated to the GRIC, consistent with FMIC Water Rights Settlement Act provisions.					

### I.B. Non-Binding Plans to Take and Use CAP Water

A letter soliciting information regarding nonbinding plans to take and use CAP water was sent to GRIC. In the absence of a response, the plans presented in this section were developed based upon information provided in the PMIP PEIS and discussions with Reclamation staff. They are

speculative in nature and are presented merely to provide a basis for comparing the potential extent of impacts that could occur across the range of alternatives.

The location of the GRIC Reservation and the PMIP are shown on Figure L-IND-2.

**I.B.1. Uses**

Potential non-binding uses of CAP water received under each of the action alternatives are summarized in Table L-Indian-4. Because the PMIP PEIS described a PMIP maximum build-out that exceeds existing water supplies, for purposes of the draft EIS it is assumed the primary use of any CAP water received from this project would be for agricultural irrigation, in support of the PMIP. Figure L-IND-2 shows the common-use system and acreage to be farmed as part of the PMIP.

Under the Settlement Alternative, 102,500 afa would be leased or exchanged with seven Salt River Valley area municipalities, ASARCO, and PD, as described in Table L-Indian-5.

**Table L-Indian-4**  
**CAP Allocation Draft EIS**  
**GRIC**  
**Additional CAP Allocations**  
**Potential Non-Binding End Uses of Water**  
**(in afa)**

Use	Alternative				
	No Action	Settlement	Non Settlement 1	Non Settlement 2	Non Settlement 3
Irrigation-PMIP	0	93,500 <sup>(a)</sup>	35,600 <sup>(d)</sup>	75,099 <sup>(e)</sup>	170,200 <sup>(f)</sup>
Lease or Exchange Off-Reservation <sup>(b)</sup>	0	102,500	0	0	0
Water Reserved for Future Final Water Rights Settlement (HVID Water)	0	0	17,800	17,800	17,800
<b>Total</b>	<b>0</b>	<b>155,400<sup>c</sup></b>	<b>53,400</b>	<b>92,899</b>	<b>188,000</b>

Notes:

(a) Detail of 93,500 afa:

102,000 (new CAP allocation)

+18,600 (RWCD CAP water assigned to GRIC)

+17,800 (HVID CAP water assigned to GRIC)

+17,000 (ASARCO CAP water assigned to GRIC)

155,400 afa

-41,000 (lease to seven cities)

-17,000 (CAP water leased to ASARCO)

-12,000 (CAP water leased to PD)

-32,500 (exchange with Mesa and Chandler)

+40,600 (reclaimed water received from Mesa and Chandler)

93,500 (Net water used on-farm by GRIC resulting from the settlement and additional CAP allocation.)

(b) Detail on leases and exchanges provided in Table GRIC-5.

(c) This column does not sum neatly because of the net addition of reclaimed water, see footnote (a).

(d) 35,600 afa = 18,600 (RWCD CAP) + 17,000 (ASARCO CAP).

(e) 75,099 afa = 35,600 + 39,499 (new CAP allocation).

(f) 170,200 afa = 35,600 + 134,600 (new CAP allocation).

<b>Table L-Indian-5</b> <b>CAP Allocation Draft EIS</b> <b>GRIC</b> <b>Leases and Exchanges Under Settlement Alternative</b> <b>(in afa)</b>	
<b>Description</b>	<b>Amount</b>
100-year lease to be divided among Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, and Scottsdale	41,000
Lease to ASARCO	17,000
Lease to PD	12,000
Exchange with Mesa <sup>(a)</sup>	23,540
Exchange with Chandler <sup>(b)</sup>	8,960
<b>Total</b>	<b>102,500</b>
<b>Notes:</b> (a) Mesa will provide GRIC with 29,400 afa of reclaimed water in exchange for 23,540 afa of CAP water for net to GRIC of 5,860 afa. (b) Chandler will provide GRIC with 11,200 afa of reclaimed water in exchange for 8,960 afa of CAP water for a net to GRIC of 2,240 afa.	

### I.B.2. Facilities

The facilities required to develop the entire PMIP, and the environmental consequences of constructing and operating them, were described in the PMIP PEIS. Of the total 146,330 acres to be developed through PMIP, each alternative would be able to serve a portion of that acreage, based upon a 4.5 af/acre water duty. It cannot be estimated if these acres would be rehabilitated acres or new acreage. For the purposes of estimating impacts in this draft EIS, it is assumed that it would be all new acreage. Table L-Indian-6 summarizes the agricultural acreage that would be developed, by alternative.

<b>Table L-Indian-6</b> <b>CAP Allocation Draft EIS</b> <b>GRIC</b> <b>New Agricultural Acreage as a Result of Additional CAP Allocation</b> <b>(in afa)</b>					
	<b>Alternative</b>				
	<b>No Action</b>	<b>Settlement</b>	<b>Non Settlement 1</b>	<b>Non Settlement 2</b>	<b>Non Settlement 3</b>
New Agricultural Land Brought into Production	0	20,800	8,000	16,700	38,000

Should on-farm distribution systems need to be constructed to deliver CAP water allotted through this project, there would be some on-the-ground construction; however, these impacts, and impacts from land subjugation itself, were already described in the PMIP PEIS. The PMIP PEIS has an environmental commitment to evaluate and provide environmental clearances for

all subsequent construction related to the implementation of the PMIP. Environmental assessments are being prepared for all major features of the PMIP prior to construction, tiered from the PMIP PEIS.

### **I.C. Population Projection**

The population in 1985 for the GRIC was 10,538. The estimated 2001 population level for the GRIC is 11,057, and the 2051 population level is estimated to be 15,203. The population is expected to grow by approximately 38 percent over the 50-year CAP contract period (i.e., 2001-2051).

### **I.D. Environmental Effects**

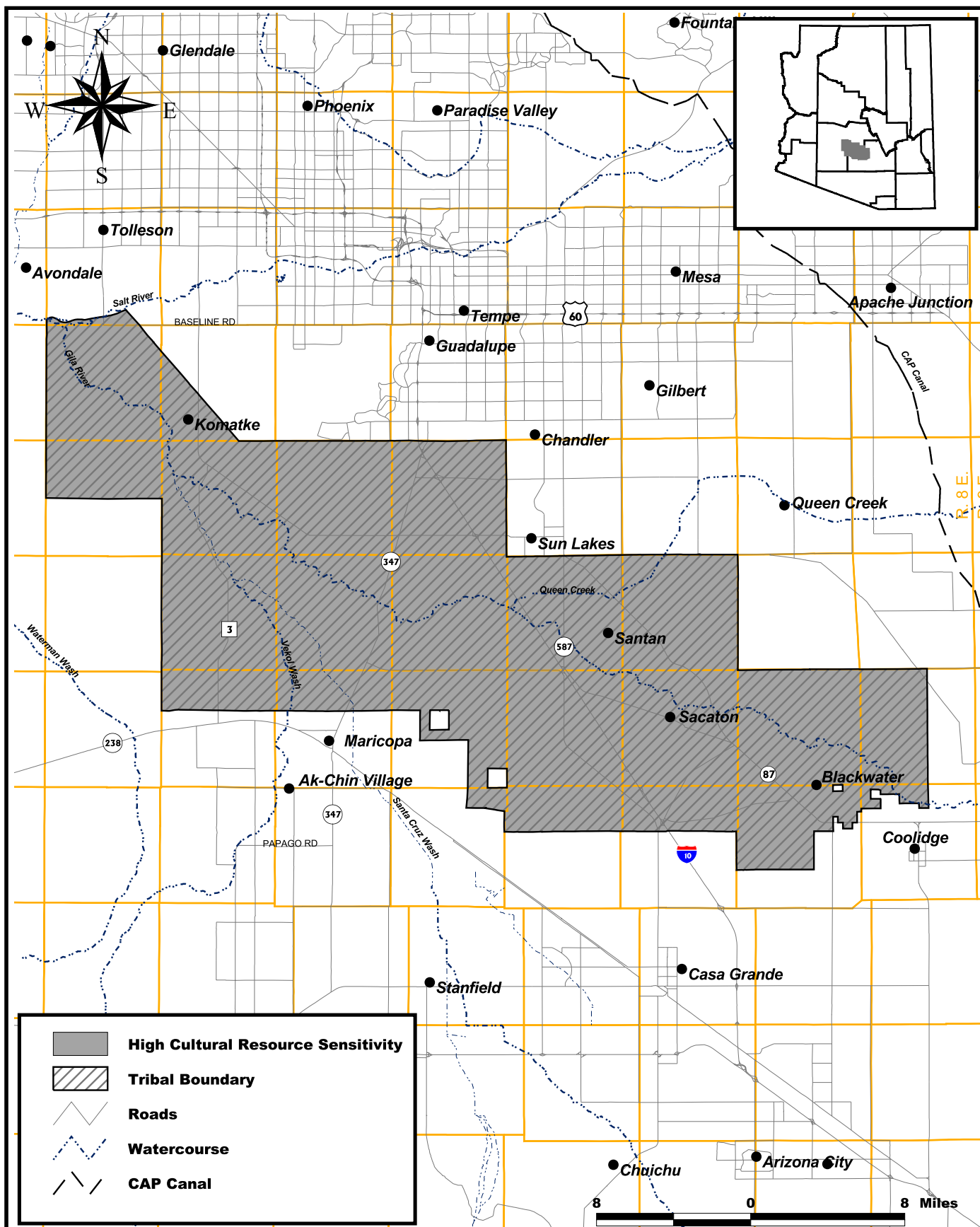
This analysis considers only those effects anticipated to occur due to developing and farming additional acreage, as a result of receiving additional CAP water under each of the action alternatives considered in the draft EIS.

#### **I.D.1. Land Use**

The PMIP PEIS identified a total of 146,330 acres that would be developed and farmed under the PMIP. Of that total, about 69,321 acres are under agricultural development or are retired agricultural land (U.S. Department of the Interior 1997). Therefore, up to about 77,000 acres of native desert would be converted to agricultural land when all 146,330 acres are developed. As mentioned above, for purposes of this analysis, it is assumed that any development, resulting from receipt of additional CAP water under any of the action alternatives, would occur on areas that are currently native vegetation. This assumption is reflected in the following discussions, which describe the possible impacts resulting from each action alternative, as well as the No Action Alternative. Potential mitigation measures identified in the PMIP PEIS that are applicable are also noted.

#### **I.D.2. Archaeological Resources**

The GRIC is located in the Middle Gila River Valley, within the heart of the Hohokam “core” area. It has long been the home of the Akimel O’odham (also known as the River Pima) and the Pi-Posh (Maricopa) Tribes. Many prehistoric sites—including Snaketown—as well as protohistoric and historic Pima and Maricopa sites, are known to be present within GRIC boundaries. Recent surveys (e.g., Gregory and Huckleberry 1995) suggest a site density of four to five prehistoric and historic sites per square mile (m<sup>2</sup>). Of particular importance are sites dating from the earliest phases of the Pima and Pi-Posh occupation, much of which remains undocumented archaeologically. Other prehistoric cultural resources that might be expected in this entity include trails, petroglyphs, artifact scatters, special-use sites, isolated features, and agricultural fields. Historic properties might include individual households, farmsteads, water-control features (e.g., the Hoover irrigation ditch in St. Johns), telegraph lines, and transportation-related sites such as stage stations, railroad features, and roads. The GRIC has a Cultural Resources Division. Cultural resource sensitivity areas in this entity are shown in Figure L-IND-3. Based on the limited data used to generate the cultural sensitivity designations,



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**CAP Allocation Draft EIS  
Cultural Resources  
Gila River Indian Community**

**Figure #L-IND-3**



the potential for cultural resource impacts in this entity is high. Section 106 consultations, pursuant to the NHPA, will be carried out for all features of PMIP prior to construction.

### **I.D.3. Biological Resources**

#### **I.D.3.a. Existing Habitats**

The Reservation is traversed by ephemeral reaches of the Gila River (1,100-1,500 feet elevation (E)). Riparian vegetation along the Gila River consists of sparse stands or individual salt cedar. Outside the flood plain, Creosote-bush Association occurs with a few mesquite. Mesquite, seep willow, salt cedar, and desert broom were found along part of Santa Cruz Wash. Most of the adjoining area is agricultural or urban. At higher E's (2,000-2,700 feet), Bursage-Foothill Paloverde Association occurs on the alluvial fans and higher plains where co-dominants include buckhorn cholla, Engelmann hedgehog, chain-fruit cholla, and creosote-bush. Other common trees include velvet mesquite, desert ironwood, and saguaro. Creosote-bush Association occurs in the deeper soils

#### **I.D.3.b. Impacts to Biological Resources**

Estimates of farmland that will be created are 20,800 acres for Settlement Alternative, 8,000 acres for the Non-Settlement Alternative 1, 16,700 acres for the Non-Settlement Alternative 2, and 38,000 acres for Non-Settlement Alternative 3. This farmland will result in loss of natural habitat in the lower E of the Reservation.

#### **I.D.3.c. Summary of Possible Impact to T&E Species**

Impacts to federally listed species are possible on the GRIC. However, the extent of the possible impacts can only be fully assessed when site-specific development plans are available. Reclamation and the GRIC have an established process for site specific ESA compliance for each feature of the PMIP, as detailed planning is completed. Potentially suitable habitat will be surveyed for T&E species as appropriate and the results will be used in Section 7 consultations with USFWS.

### **I.D.4. Water Resources**

Under present conditions, GRIC meets municipal, industrial, and irrigation demands by delivery of both surface water and groundwater. The primary source of surface water to GRIC is Gila River water, which is delivered by the SCIIP. That water is currently conveyed in a system of unlined canals, which have significant seepage losses.

Groundwater is obtained from the alluvium beneath GRIC lands. Groundwater is also pumped by SCIIP off the Reservation and is delivered to GRIC via the SCIIP conveyance facilities. Groundwater levels have historically declined on much of the Reservation. The TDS concentration of groundwater beneath GRIC ranges from less than 1,000 to over 3,000 ppm, with TDS generally increasing from the southeast to the northwest.

Estimated groundwater level impacts are summarized in Table L-Indian-7, which shows the estimated change in groundwater levels from 2001 to 2051 for each alternative, and the groundwater level impact (i.e., the difference between the change in groundwater levels for each alternative relative to the change for the No Action Alternative). The impacts for GRIC are shown for six sub-areas. These impacts reflect that, under all alternatives, it was assumed that the GRIC would line their canals prior to receiving CAP water. Impacts to groundwater quality on GRIC are not anticipated.

Under the No Action Alternative, changes in estimated groundwater levels are very small in the western portion of GRIC, with a decline in groundwater levels of one foot in the Maricopa Village sub-area and a rise in groundwater levels of one foot in the Komatke sub-area. Larger declines occur to the east, ranging from 12 feet in the GRIC South sub-area to 47 feet in the GRIC North sub-area. Under the No Action Alternative, additional lands would be developed for irrigated agriculture, and additional supplies would be provided to meet those demands. Based on the assumptions for this analysis, there would be a net recharge for GRIC absent consideration of groundwater underflows to adjacent areas. The declines in groundwater levels for GRIC appear to be a reflection of the groundwater level declines in the adjacent sub-areas and the resulting changes in groundwater underflows.

Groundwater level impacts of the Settlement and Non-Settlement Alternatives in GRIC reflect a number of factors that vary for each alternative. These factors include the amount of CAP water allocated to GRIC, the total acres developed for irrigation and the buildout schedule for those acres, the assumed proportion of the demands which are met with groundwater, and changes in underflow between sub-areas.

The net groundwater pumping (groundwater pumping less incidental recharge) integrates each of these factors except changes in groundwater underflow between GRIC and adjacent areas. The relative impacts of these alternatives reflect the differences in net pumping, with greater net pumping resulting in lower groundwater levels. Groundwater levels also reflect that there is a net groundwater outflow from GRIC under all alternatives.

Changes in groundwater quality would not be anticipated on GRIC. However, there would be the potential for subsidence due to the lower groundwater levels, particularly in the eastern portions of GRIC.

**Table L-Indian-7**  
**CAP Allocation Draft EIS**  
**GRIC – Groundwater Data Table**

<b>Alternative</b>	<b>Sacaton Sub-area</b>		<b>East Sub-area</b>		<b>North Sub-area</b>		<b>South-Sub-area</b>		<b>Komatke Sub-area</b>		<b>Maricopa Village Sub-area</b>	
	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)	Estimated Ground-water Decline From 2001 to 2051 (in Feet)	Ground-water Level Impact <sup>a</sup> (in Feet)
No Action	-44	--	-26	--	-48	--	-12	--	1	--	0	--
Settlement Alternative	-56	-12	-42	-16	-73	-26	-38	-26	-8	-15	-8	-8
Non Settlement Alternative 1	-43	1	-25	2	-43	4	-10	2	2	-2	2	2
Non Settlement Alternative 2	-46	-2	-29	-2	-56	-8	-15	-3	-5	-4	-5	-5
Non Settlement Alternative 3A	-61	-17	-35	-9	-73	-25	-22	-11	-3	-6	-3	-3
Non Settlement Alternative 3B	-63	-19	-35	-9	-70	-22	-33	-21	-4	-7	-4	-4

Notes:

- Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration.
- The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.

**I.D.5. Socioeconomic**

The reallocation of non-Indian agricultural water to Indian agriculture will have significant socioeconomic impacts on the Gila River Indians. The Pima and Maricopa Tribes who now comprise GRIC were historically agrarian peoples. Archaeologists believe the Pima and Maricopa Tribes farmed the Gila-Salt Valley since about 300 B.C. Between 700 and 1300 A.D. the Pima and Maricopa Tribes built an extensive system of irrigation canals for farming. Agriculture is central to their culture.<sup>1</sup> The GRIC 1998 Gaming Report cited agriculture and gaming, "... as the main lifeline of economic support for GRIC."

Presently the primary components of the GRIC economy are agriculture, commerce and industry, recreation, and services. However, poverty levels in GRIC are high. In 1989, 63 percent of persons lived below the poverty line. Unemployment in 1990 for GRIC was 30 percent. Below are comparative Arizona data.

<b>Table L-Indian-8</b> <b>CAP Allocation Draft EIS</b> <b>Income Statistics for GRIC</b>				
<b>Type of Income</b>	<b>GRIC</b>	<b>Pinal County</b>	<b>Maricopa County</b>	<b>Arizona</b>
Median household income	\$10,069	\$21,301	\$30,797	\$27,540
Per capita income (Poverty Status)	\$3,354	\$9,228	\$14,970	\$13,461
Persons below poverty	63%	23.6%	12.3%	15.7%
Families below poverty	60.4%	18.7%	8.8%	11.4%
Female households, families below poverty	74.9%	52%	25.8%	31.6%
Households with public assistance income	33%	9.6%	4.9%	6.1%

Source: Bureau of the Census, 1990 Population and Housing Statistics

Although economic conditions have improved, the GRIC still face major challenges compounded by generations of economic depression, poverty and subsistence living. Increased agricultural production may provide additional job opportunities and increase overall GRIC income.

Under the No Action Alternative, the agricultural output of the GRIC is estimated to be \$78.361 million in the year 2051. Under the Settlement Alternative the GRIC increase their agricultural output by an estimated \$29.650 million above the No Action Alternative level in 2051. Similarly, the increases in agricultural output in year 2051 above that in the No Action

<sup>1</sup> Final Programmatic Environmental Impact Statement – Pima-Maricopa Irrigation Project, U. S. Bureau of Reclamation, date.

Alternative are \$7.612 million for Non-Settlement Alternative 1, \$15.531 million for Non-Settlement Alternative 2, and \$47,299 million for Non-Settlement Alternative 3.